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Progress Report on
Evaluation of Commercial Utility of ERTS-A
Imagery in Structural Reconnaissance for
Minerals and Petroleum

(E73-10004) EVALUATION OF COMMERCIAL
UTILITY OF ERTS-A IMAGERY IN STRUCTURAL
RECONNAISSANCE FOR MINERALS AND PETROLEUM
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ERTS-A Proposal Number
MMC-083

Principal Investigator
PR-181

Reporting Period
November 1, 1972 through December 31, 1972

Prepared by
Texas Instruments Incorporated

January 8, 1973

I PROGRAM OBJECTIVE

The objective of this study is to evaluate, from the commercial viewpoint, the feasibility of ERTS-A imagery as a medium for interpreting and mapping large-scale structural lineaments in both Precambrian Shield areas and basins containing younger sediments. Successful completion of this program could lead to Continental Plate tectonic interpretation from purchased ERTS-type imagery which would be useful to mining or petroleum compaines for guiding and/or interpreting reconnaissance prospecting operations.

II SUMMARY OF WORK (November 1 - December 31, 1972)

Numerous contacts have been made with NASA regarding the quality of prints received for mosiacing. Print densities particularly from MSS bands 1 and 2 are too dark to be of use for our purposes. However mosiacing of all areas of interest is continuing with best available prints and an initial analysis has been completed in Area 3 (New Mexico, Arizona, and Texas). This analysis has been reported as a part of our Data Analysis Plan and funding for Phase III has been requested.

III WORK SCHEDULE

Assuming Phase III is funded, we will continue mosiacing imagery as it becomes available. However we expect analyses to be delayed until more complete and useful imagery is delivered.

IV PROBLEMS

Up to this time, our major problem has been timely delivery of useful imagery. This problem still exists but at this time, we are also out of funds until Phase III is approved.

V PLANS FOR NEXT REPORTING PERIOD

The work is expected to proceed in imagery indexing and mosaicing, if Phase III approval is obtained. It is expected that this work will continue until enough useful mosaics are prepared to allow economic use of our investigators time in analyzing the data. Thus our schedule is a function of the rate with which we receive useful imagery.

VI SIGNIFICANT RESULTS

Initial analytical results in Area 3 have been very encouraging; not only have new major lineaments been detected but many of the intersections of these lineaments correlate with the general location of known mineral deposits while others appear to outline petroleum-bearing basins and uplifts. If later analyses confirm these results the economic impact of ERTS type imagery could be very significant in worldwide mineral and petroleum reconnaissance.

VII PUBLISHED ARTICLES

Permission for a new release on contract award was requested on October 13, 1972. Permission was subsequently received and the approved article was released.

VIII CHANGE RECOMMENDATIONS

If anything can be done to reduce the density and improve the contrast of imagery collected in MSS bands 1 and 2 it should be done.

IX CHANGES IN STANDING ORDER FORMS

None

X DESCRIPTOR FORM INCLUSIONS

None

XI PERSONNEL CHANGES

No significant changes have been made in this reporting period.

XII ADEQUACY OF FUNDS

Phase II is complete. Therefore we are out of funds until approval to begin Phase III is received.